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**DYNAMICS OF APPROPRIABILITY AND APPROPRIATION STRATEGIES OF
INNOVATION CASE COCA-COLA**

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<p>Abstract</p> <p>The phenomenon of the ability to capture the value and profit more from innovation for the inventor itself has attracted the attention of scholars and practitioners. Here, the basic premise of the matter is that innovation becomes a main competitive element for a potential innovator only if s/he is able to appropriate benefits from innovation. The studies show that innovation itself not necessary brings a lot of advantages to the business, rather appropriability or appropriation strategies of innovation are value creators to the business. It was found that different appropriation strategies bring different results to the business. Proper understanding of the use of appropriability mechanisms and appropriation strategies will help to save innovation from imitation and same time will save resources of the company.</p> <p>This study aims to deepen the understanding of the dynamic use of appropriation strategies and appropriability mechanisms. For this research work, the Coca-Cola company has been chosen as an example of successful and innovative business. To implement analysis three elements of the Coca-Cola product have been chosen Merchandise 7x, the bottle of Coca-Cola drink, and a variety of drinks. The data was collected from the various sources with time interval starting from the date of establishment of the company, ending the year 2020.</p> <p>The finding is that the Coca-Cola company was able to protect its own main innovation from imitation for more than 130 years. To succeed in the protection of the innovation various appropriation strategies and appropriability mechanisms were adapted. Also, to protect main innovation complementary assets such as packaging and variety of drinks were chosen. Moreover, the complementary assets were also protected from imitation. The main finding is that appropriation strategies and appropriability mechanisms for the same element were changed during time according to the internal and external changes of the company. This finding is consistent with previous literature suggesting that the use of appropriability mechanisms or appropriation strategies is changing with the evolution of enterprises.</p>			
Keywords Innovation, appropriation strategy, appropriability, appropriability mechanisms, dynamics, Coca-Cola.			
Additional information			

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1. INTRODUCTION

1.1 Rationale of the study

‘Firms are born to make decisions, thrive or they die’ (Cassiman et al. 2010:372). In the modern world, rapidly changing marketplace and increasing number of rivals pressure the businesses to develop unique capabilities in order to create competitive advantage (Brexendorf et al. 2015). Companies are forced succeed on creation of new products and services to secure competitive advantages and drive future growth (Keller & Lehmann 2006; Brexendorf et al. 2015).

In the dynamic environment that companies face nowadays, innovation and knowledge have become as the engine of long-run growth (Hall & Sena, 2017) and as key factors affecting the competitiveness of the businesses (Milesi et al. 2013). Innovation is not a choice but a necessity to stay ahead of the competition, to thrive and to survive (Beregheh et al. 2009; Vuorinen et al. 2012; Hannah et al, 2019).

In addition, it was found that companies are more likely to devote resources (effort, time and money) to innovate activities if they are able to earn financial returns from the innovations that they invent (Milesi et al. 2013). However, this kind of policy has its challenges, such as cost of innovation, possible shorter product life cycle and risk of product failure. Those risks create a barrier towards reaching expected returns on investment (Sorescu & Spanjol, 2008; Hoffman et al. 2010). Therefore, innovators’ capacity to benefit from their investments in innovations creation is a core concern in the business (Leiponen & Byrman, 2009). Thus, the firms’ opportunities to protect innovation is considered as the key incentive for innovation. Here incentive became a key factor in management of innovation (Levin et al. 1987), This strive had formed a basis for development of intellectual property rights’ system, for instance. (Gallini, 2002; Kultti et al. 2006).

On the one hand, innovation is not created in isolation. It is a result of the interactions between other companies, institutions and organizations where the company is innovating (Hall & Sena, 2017). It means that cooperation with different stakeholders increases the speed of innovations’ creation process and thus improve

the firm's productivity. On the other hand, collaboration with other parties or unsecure disposal of information can lead to spillovers. Therefore, competitors or imitators, or both of them may profit more from innovation than inventor itself. Thus, appropriating value from innovation is a main problem that any individual inventor or an innovative company faces in the markets nowadays (Arrow, 1962; Teece, 1986; Ritala & Hurmelinna-Laukkanen, 2018).

Based on these findings that are mentioned above, studies rather focus on appropriation strategies that firms choose with an intention generate profits or capture value from innovation. Thus, the basic premise of the matter is that innovation becomes a main competitive element for a potential innovator only if s/he is able to appropriate benefits from innovation (Milesi et al. 2013). The studies show that innovation itself not necessary brings a lot of advantages to the business, rather appropriability or appropriation strategies of innovation are value creators to the business. It was found that different appropriation strategies bring different results to the business (Ritala & Hurmelinna-Laukkanen, 2018).

According researchers Ritala and Hurmelinna-Laukanen, appropriation strategy might involve different forms: monopolistic, defensive, exploitative, connective, disseminative, and facilitative. Also, various forms can be adopted to different elements of the product at the same time (e.g. Coca-Cola formula and Coca-Cola bottle). Moreover, because of changing market conditions, forms of appropriation strategy can be changed and later deactivated over the time. Even if the strategy remains the same, the mechanism for innovation protection may change (Ritala & Hurmelinna-Laukanen, 2018).

Thus, it is important to study and understand well dynamics of appropriability and appropriation strategies in case to be able gather most benefits from innovation to innovator itself. Proper understanding of appropriability mechanisms will save innovation from competitors and same time will save resources of the business.

Regarding this matter a lot of theoretical research has been done (Winter, 2006; Ceccagnoli, 2009; Ahuja et al, 2013; Spithoven & Teirlinck, 2015; Ritala & Hurmelinna-Laukkanen, 2018). Here, more empirical studies are needed to verify

the given theory. Thus, future research will be focused on dynamics of appropriability and appropriation strategies with examples of concrete company. For the particular study Coca-Cola company's product, or more precisely three elements of Coca-Cola product are chosen.

Coca-Cola company has been chosen because it has a long history behind. The Coca-Cola company is the world's largest beverage company which offers more than 500 sparkling and still brands in more than 200 countries worldwide. The first drink Coca-Cola was created in 1886 and still is the most known and valuable drink in the world (World of Coca-Cola, 2020). During more than 130 years the company has managed to protect its innovations from imitation by adapting different protection methods. It means that the company was able to choose the right appropriability strategy to protect innovation and gather benefits from it. According, the Forbes, the American business magazine, the Coca-Cola Company is one of the most innovative companies in the world (Forbes, 2018). It shows that the company has managed to innovate and profit from innovation successfully. Considering all those facts the company is a great example to study.

1.2 Purpose of the study and research questions

The purpose of this study is to study different kinds of innovations appropriability and appropriation strategies used by a case company. Also, the goal of this longitudinal research is to understand deeper the dynamics of appropriability and appropriation strategies for innovations under changing external and internal conditions over time. For these purposes, the Coca-Cola company has been chosen with a goal to examine the factors that affected the company to choose particular appropriability and appropriation strategies for its own innovations.

As it was mention earlier appropriation strategy might involve different forms and various forms can be adopted to different elements of the product simultaneously (Coca-Cola formula and Coca-Cola bottle, for instance). Also, forms of appropriation strategy can be changed and later deactivated over the time (Ritala and Hurmelinna-Laukanen, 2018). Therefore, based on the analysis results, the study aims to deepen

knowledge of the dynamic use of appropriability mechanisms. Hence, the main research question of this study is:

- What kind of approaches the Coca-Cola company has been chosen to protect its own innovations and how those approaches were changed over time?

In order to answer the main question, several sub-questions were developed:

- What kind of appropriation strategies were adapted for the different elements of the Coca-Cola product?
- What Coca-Cola has been done over time to appropriate value from its own innovations?

1.3 Research Methodology

The Coca-Cola company has managed to keep its own innovation from imitation and extract the value from it for more than 130 years. Thus, qualitative research method was chosen for this study because it allows to understand the phenomenon in-depth. This type of research is used when the study needs to evaluate a subject from qualitative perspective which is impossible to translate into numbers. (Ericsson and Kovalainen, 2008:5).

Furthermore, a case study with longitudinal and archival research techniques was selected for this thesis. Primary data will be collected based on secondary data combined with theory. Secondary data will be collected combining longitudinal design with the archival design as a data collecting technique. (Wilson, 2010).

Then, a case study was chosen for this research because this strategy helps to examine a phenomenon within a real life by using several sources of evidence. (Yin, 2014) Coca-Cola was chosen as a case company, because the company has managed successfully extract the value from its own main innovation for more than 130 years. In particular, this research concentrates on three elements of Coca-Cola company: the bottle of Coca-Cola drink, Merchandise 7X, and a taste of Coca-Cola beverage.

1.4 Key concepts of the study

Innovation

Despite the fact that definition of innovations can be evaluated from broad view and different perspectives, the economic value and technological change which it brings for the company and for the environment are indispensable (Veblen, 1899; Lorenzi et al., 1912; Schumpeter, 1934; Baregheh & Sambrook, 2009). In this study innovation can be described as it is a new product, service or process based on which the company is able to generate benefits such as financial returns, competitive advantage, and business growth and prosperity.

Appropriability

Researchers state that appropriability is related to the company's ability to protect innovation against unwanted imitations (Teece, 1986; Malerba, 2002; Winter, 2006; Spithoven and Teirlinck, 2015; Ritala and Hurmelinna-Laukanen, 2018). The aim of appropriability is to have the control over the intellectual assets related to the innovation (Ceccagnoli, 2009).

Appropriability mechanisms

Appropriability mechanisms are means through which innovators can protect innovation from harmful imitation and competition and consequently secure the ownership over the intangible features, or at least increase control over the core innovation. (Lavie, 2006; Galli  and Legros, 2012; Thom  and Bizer, 2013).

Appropriation strategies

Consequently, appropriation strategies can be defined as innovation specific strategic choices over the mechanisms, whereas the openness of appropriability is focused on gaining profit from innovation under different external factors (Ritala & Hurmelinna-Laukanen, 2018).

1.5 Research structure

The structure of the study is comprised of five chapters. The first chapter of this thesis is the introduction. The purpose of this chapter is to introduce the phenomenon to the reader. It provides the background of this study, briefly describes Coca-Cola as case company, explains the purpose of this study with outline of research questions. Then it briefly explains the research methodology and provides the research structure.

Then, the theoretical part is described in the second chapter. It includes the definition of innovations, explains the appropriability of innovation focusing on different types of it. Furthermore, the study analyzes the strategies of appropriation outlining a conceptual framework that is used in this study. Appropriability mechanisms and dynamics of appropriation strategies are broadly described.

Furthermore, a third chapter describes a research methodology. In this chapter, studies are concentrated on the discussion of the chosen research approaches and designs used in this study. Finally, the data analysis method is shortly represented.

Then, the fourth chapter is dedicated to the research findings. In the beginning, the case company in more detail is described. Then empirical findings related to each chosen element of Coca-Cola product combined with the theory described.

Finally, this thesis will be finalized by the fifth chapter which discusses the conclusions of this study. Additionally, managerial implications and limitations combining with recommendations for the future research will be described. This part also provides validity and reliability findings for this research study.

2. INNOVATION, APPROPRIABILITY AND APPROPRIATION STRATEGIES

Previous chapter has mentioned that innovation plays an important role in the modern business world. It is the main prerequisite for the companies to thrive, compete, gain the return on investments and make a profitable business in such a dynamic marketplace. However, according Ritala & Hurmelinna-Laukkanen (2018), the innovation itself does not bring the profit for the organization, rather appropriability and appropriation strategies of innovation allows to generate financial benefits. There are several appropriation strategies which can be used by the company. Therefore, the purpose of this chapter is to provide the definition of innovation and to bring a deeper understanding of it. Then, the aim of this part is to define appropriability mechanisms and describe appropriation strategies in detail. Finally, in this part dynamics of appropriation strategies are explained at the end of this theoretical chapter.

2.1 Innovation

In the modern business world, organizations face highly dynamic competition and innovations are not a choice anymore. They became a necessity in order to be ahead of the competition and to be able to survive (Beregheh et al. 2009; Vuorinen et al. 2012). Furthermore, this statement had found a support in the work of other researches who tell that since marketplace became more dynamic, companies must innovate in a response to the changing customer preferences and their lifestyles. It helps them to capture the opportunities provided by technology development and evolvement of marketplace. (Lorenzi et al. 1912; Schumpeter, 1934; Baregheh & Sambrook, 2009)

There are many definitions of innovations. For example, researches Zahra and Covin (1994:183) define it as “innovation is widely considered as the life blood of corporate survival and growth”. It means that innovation is the main component for value extraction when building the competitive advantage and future growth of the business. Then, other scholars tell that innovations are seen as the main driving force of continuous improvements in society’s welfare and economic growth (Moser,

2016). Either, some researchers examine the innovation from the perspective of novelty to the stakeholders (Van du Ven et al. 1986; Baregheh & Sambrook, 2009). Furthermore, Thompson's (1965) in his work tells that "innovation is the generation, acceptance and implementation of new ideas, processes products or services" Thompson's (1965: 2). Similarly, innovation was described as "the effective application of processes and products new to the organization and designed to benefit it and its stakeholders" (Wong et al. 2008: 2). Thus, innovation can be viewed as a new entity created with the purpose to bring the benefit to the innovator and the society. (Baregheh & Sambrook, 2009)

On one hand, practitioners state that despite of some overlappings in the definition of innovation, the great number and diversity of definitions create the situation where there is no clear or general definition of innovation. (Bessant et al. 2005:1366). This statement is supported by Zairi (1994) and Cooper (1998) telling that the main challenge of innovation is a lack of a common definition, which undermines the innovation in its nature due to ability to cover various disciplines. It has been said that "the term 'innovation' is notoriously ambiguous and lacks either a single definition or measure" (Adams et al., 2006:22). Thus, it means that due to various nature of innovation the precise and single definition of it does not exist. (Baregheh & Sambrook, 2009)

On the other hand, despite of broadness of innovations' definition, it can be viewed from several perspectives. The first form of innovation can be seen as innovation of processes. Secondly, it can be viewed as discrete item including products, services and programs. Final form of innovation is an attribute of the organization (Kimberly, 1981). Similarly, Damanpour (1991) tells that companies use innovations as the instrument to influence the environment or they can evolve due to changing internal and external environments. (Damanpour, 1991). It means that innovations vary depending on resources of the company, its capabilities, future plans and strategies of the business. They can be related to new products and materials, new process and services, new forms of the organization. (Ettlie and Reza, 1992). It means the definition of innovation depend on the different company departments where it is used, such as human resource management, product design, marketing, engineering, product research or product design. Similarly, innovations can be evaluated in a

relation to firms' products, services, operations, and people (Veblen, 1899; Lorenzi et al. 1912; Schumpeter, 1934). Consequently, the definition of innovation varies from the business form where it is used and can be examined from their different perspective. (Damanpour & Schneider 2006; Baregheh & Sambrook, 2009). Despite the fact that definition of innovations can be evaluated from broad view and different perspectives, the economic value and technological change which it brings for the company and for the environment are indispensable (Veblen, 1899; Lorenzi et al., 1912; Schumpeter, 1934; Baregheh & Sambrook, 2009).

In this study innovation can be described as it is a new product, service or process based on which the company is able to generate benefits such as financial returns, competitive advantage, and business growth and prosperity. According Ritala and Hurmelinna-Laukanen (2018), the company does not benefit from the innovation itself rather appropriability or appropriation strategies of innovations are value creators to the business. A detailed description of appropriability of innovation and appropriation strategies is provided below.

2.2 Appropriability of innovation

Researchers state that appropriability is related to the company's ability to protect innovation against unwanted imitations (Teece, 1986; Malerba, 2002; Winter, 2006; Spithoven and Teirlinck, 2015; Ritala and Hurmelinna-Laukanen, 2018). Appropriability has the aim to have the control over the intellectual assets related to the innovation (Ceccagnoli, 2009). Then, in this context, appropriation is the realized potential. The central point of view in appropriability and appropriation is that ability to protect the innovation from imitation leverage the competitive advantage of an individual company. (Alexy et al., 2017; Ritala & Hurmelinna-Laukanen, 2018).

Imitation is considered as notable problem when dealing with innovation. (Arrow, 1962; Barney, 1991; Lavie, 2006; Thomä and Bizer, 2013). Thus, ownership and retaining control over innovation are considered as main objective for appropriation. Here, the central starting point is that either the core innovation itself can be protected from imitation (e.g., by relying on secrecy, patent protection, contractual

arrangements), or then complementary assets, such as efficient marketing or sales channels for example. Thus, appropriability have a central role in securing the profits and limiting competition (Teece, 1998; Ritala & Hurmelinna-Laukanen, 2018). Companies try to limit the imitation by several means. The core innovation itself can be made less imitable by using a patent protection, relying on secrecy, making contractual agreements. In turn, the complementary assets of innovation, such as sales and marketing can be used in the more efficient manner in order to diffuse the core innovation and limit the competition (Teece, 1998; Ritala & Hurmelinna-Laukanen, 2018). Thus, possessing ownership and having control over innovation have been the prime tasks of the appropriation (Alexy et al. 2017; Ritala & Hurmelinna-Laukanen, 2018).

Furthermore, changed business environment which characterized by focus on networking modified the view on appropriability (Appleyard & Chesbrough, 2017). Despite of the fact that appropriability and capturing the value from innovation still receive the central role firm's successful development, the attention in shifted from protection and prevention of imitation towards increased control over the innovation and the knowledge assets related, like patents can be also used for knowledge transfer. Under these circumstances, the returns from these innovations can occur for the company during indefinite period of time. (Hurmelinna-Laukkanen, 2012; Alnuaimi & George, 2016; Alexy et al. 2017). It is important to notice that there are several kinds of appropriability. It is distinguished primary, generative and prospective appropriability. (Ahuja et al. 2013) They are discussed in more detail below.

Primary appropriability

Primary appropriability has relatively short-term perspective and referred as problem-solving mechanism. Its aim is to capture the share of the financial returns. It could be also referred as "closed appropriability" (Ritala and Hurmelinna-Laukanen, 2018).

Generative appropriability

In turn, generative appropriability can be defined as efficiency in exploiting the innovation and gaining the share of its future progress. This approach demands more long-term perspective view. It is closely related the “open appropriability” (Ritala and Hurmelinna-Laukanen, 2018).

Prospective appropriability

Prospective appropriability is another form of innovation management. It goes further in future to embrace the openness of innovation. It occurs because profiting from innovation can be uncertain and depend on the future capabilities or ability to capture external activities by the firm. (Ritala and Hurmelinna-Laukanen, 2018).

2.3 Appropriability mechanisms

When choosing appropriability mechanism it is important to distinguish what is going to be protected: the main innovation of the business or complementary assets of the main innovation? Here, ‘Complementary assets refer to the resources and capacities required to successfully commercialize innovations and appropriate their profits’ (Milesi et al. 2013:80). Factors such as control of distribution networks, service capacity, relationships with customers and suppliers, and the possession of complementary technologies refers to complementary assets (Milesi et al. 2013). It was found that when imitation is inevitable, the exploitation of the innovation strongly depends on other resources and capacities. Teece has noticed that even though innovation can be copied, many complimentary assets are difficult to imitate since they arise from interaction between people from different parts of the business and are built over the time (Teece, 1986). In this case, companies that are able retain relevant complementary assets can base their appropriation strategy on the enhancement of these assets (Milesi et al. 2013).

More, innovation itself creates value of appropriation from innovation, especially attractiveness among customers. More precisely, customers’ interest in innovation leads to the interest of competitors. Based on the profitability of innovation and

competitors' possibilities to recognize the benefits of innovation it may become a target for imitation (Hurmelinna-Laukkanen & Olander, 2014). Only properly chosen appropriability mechanisms to innovation can protect harmful imitation and competition and consequently secure the ownership over the intangible features, or at least increase control over the core innovation. (Lavie, 2006; Gallié and Legros, 2012; Thomä and Bizer, 2013). Many studies have indicated that the mainly appropriability mechanisms are used by the companies to save the innovation from imitation or protect firm's market position (Harabi, 1995; Cohen et al. 2000; Arundel, 2001; Galende del Canto, 2006; Gonza'lez-Alvarez & Nieto-Antoli'n, 2007), are divided into two categories: legal mechanisms (IPR) and strategic mechanisms (Milesi et al. 2013).

2.3.1 Formal appropriability mechanisms (legal)

The most commonly used formal mechanisms are legal ones. They are characterized by formal instruments and legal registrations with intention to provide exclusive rights for innovator to exploit innovations' benefits. Those mechanisms are intellectual property rights (IPRs) and contracts. To the IPRs group belong patents, copyrights and trade secrets. Those instruments give an innovator time-limited rights to exploit their inventions, and new designs and delay them from imitation. (Olander et al., 2014)

IPR relates to formal ways of innovation protections which is offered by the society to inventor. They can be used simultaneously and may overlap. This is the benefit of using different forms of IPR. For example, trademarks and patents can be used simultaneously; and if the patent expires, then the trademark can still protect the innovation from imitations (e.g. Teece, 1986; Cook, 2002; Jennewein et al. 2004). Similarly, a legislation can also offer a protection for innovation and its assets. The most efficient among it is contracting agreements. Contracting allows to establish institutional agreements and arrangements which offer exclusive rights similar to the ones provided by IPR (see e.g. Kemppinen, 2004).

Patent

The patent is a legal agreement by which the inventor of a new product or process achieves a right for a set period to use or produce the innovation and exclude others from making, using, or selling an invention (Griliches, 1990). The primary objective of the patent is to generate incentives for companies to invest in further developments. (Milesi et al. 2013).

Although patent is one of the most commonly used mechanism for inventors to protect innovation, the evidence shows that patents do not work in the way the theory claims (Kingston, 2001; Davis, 2004; Dosi et al., 2006;). Firstly, it is difficult to obtain. Secondly, it is not necessarily available to each company (Hurmelinna-Laukkanen, 2009). It means that acquiring patent protection requires a complicated and relatively lengthy process, it is costly and contains releasing information about the innovation. Once a patent has been registered, the information is public and is accessible to everyone. It creates the possibilities to competitors see what kind of products the company is working on at the moment. It facilitates imitation and provides the opportunity to develop it further by competition (Merges et al. 2003). All in all, patent as appropriability mechanism to protect innovation is beneficial only if the company has enforcing and monitoring capacity (Olander et al. 2014).

Trademarks

A trademark is type of IP (intellectual property) consisting of a recognizable sign, design, or expression. It identifies products or services of a particular source from those of others. The trademarks which are meant to identify services are usually called service marks. (Wikipedia, 2020). Trademarks mainly are used by businesses, but also can be applied for or owned by private persons (Finnish Patent and Registration Office, 2020).

A trademark is used for goods or services and gives the owner the right to prevent others from using same mark that causes a risk of confusion for goods or services that are similar to the owner's ones. A trademark may consist of a word or set of words, a slogan, a sound, a figurative element, a three-dimension mark or a combination of any of these. Multimedia mark or a position mark can be also

considered as the trademark. The validity period of a trademark is 10 years, but can be renewed indefinitely (Finnish Patent and Registration Office, 2020).

Trade secrets

‘A trade secret is a valuable piece of information for an enterprise that is treated as confidential and that gives that enterprise a competitive advantage.’ (European Commission, 2020). Altogether, any confidential business information, both technical or commercial, or combination of elements, which can provide a competitive advantage for the business and is unknown to others may be protected as a trade secret. (Finnish Patent and Registration Office, 2020).

In general, to register information as a trade secret, the information must be:

- commercially valuable
- be known to a limited group of persons
- be a subject for the reasonable steps taken by the rightful holder

Any illegal practice, such as, unauthorized acquisition, use or disclosure of such information is considered as violation of the trade secret’s protection. (Finnish Patent and Registration Office, 2020).

Copyright

Copyright is considered as work of art which has a form, include compositions, books, magazines, photographs, paintings, drawings, performances, audio or video recordings, etc. Meanwhile, ideas, plot, information, principles and concepts cannot be defended under copyright protection. A work of art that is an original and independent outcome of creative work. However, the quality criteria is not taken in consideration (TEOSTO, 2017).

Copyright is justified by national law and international treaties. Copyrights protection lasts for the life of the author and 70 years after the year of the author’s death in Finland, for e.g. (TEOSTO, 2017).

Registered Design

Registered Design is considered as the ornamentation, pattern, or configuration which when applied to a product gives the product saying-so “eye appeal” or unique appearance. It is possible to register a design just if it is new and distinctive. (Finnish Patent and Registration Office, 2020).

Contracts

Contracts means license or restriction of creation of, access to or use of the intellectual property or rights of intellectual property. Mainly, contracts are beneficial for safe knowledge sharing in R&D collaboration and further for desired outcomes. (Hertzfeld et al., 2006; Olander et al., 2014) It becomes a form of institutional protection as a mechanism of appropriability.

Collective labor agreements can enhance appropriability because they define the aspects which belong to the employer. Similarly, labor legislation can use long-term contracts incorporating sanctions for employee’s resignation (Rousseau and Wade-Benzoni, 1994). Those measures can prevent the leaks of knowledge and important skills from the firm. This action can also help to retain the personal within the company.

Contracts are an appropriate mechanism to protect innovation if the company is able to write the contracts that clear the ground and make the responsibilities of each party explicit. They are also beneficial if the company is able to monitor for breaches (Olander et al. 2014). In this case, labor legislation can become significant instrument for companies.

2.3.2 Informal appropriability mechanisms (strategic)

Informal appropriability mechanisms refer to the knowledge that remains unprotected by legal, institutionally established means and can be applied under

informal protection what in own way might be more appropriate alternative. This is the case when the inventions do not satisfy IPR requirements, such as legal conditions which tend to be too slow and too costly to protect innovations effectively. It happens especially in industries where a high rate of new inventions is occurring rapidly. (Olander et al., 2014). In this case secrecy, lead time, tacitness or HRM can be appropriate mechanisms to protect the innovation.

Secrecy

The first appropriability mechanism which belong to the informal group is secrecy. Secrecy is a practical concealment. It is another informal mechanism for protecting the firm's core knowledge (Hurmelinna-Laukkanen & Puumalainen, 2007, Olander et al., 2014). Secrecy is considered as unpatented knowledge about product or manufacturing process that firm has developed or built and has not been revealed to third parties (Ferna'ndez Sa'nchez, 2004). There has been noticed that secrecy is more preferable mechanism for protecting process innovations compering to product innovations (Scherer, 1980). Products are more likely to be purchased and copied by rivals engineering, where risk of imitation depends on the technological complexity of the product. Also, knowledge may be leaked through labor mobility (Delerue & Lejeune, 2010) or espionage. However, in the case of patentable innovations, companies in some cases consider secrecy to be less risky strategy than patenting due to applying process when information must be disclosed. (Milesi et al. 2013).

Lead time or first-mover

The first-mover strategy is also one of informal appropriability mechanisms when appropriating innovation benefits. The main idea is to be first in the market having a new product. (Davis, 2001; Lo'pez & Roberts, 2002; Carow et al. 2004). This appropriability mechanism has been communicated by the scholars as being the most effective one (e.g. Levin et al., 1987; Harabi, 1995; Arundel, 2001; Cohen et al., 2002). In this case, being the first mover generates a series of quasimonopoly periods, what is the best time for innovator grab benefits from innovation before

competitors or imitators arrive. Here, the first-mover advantage are barriers to entry the market for potential competitors, such as learning effects, network externalities, and the cost of change faced by clients (Fernández Sánchez, 2004; Milesi et al. 2013).

Tacitness

A tacitness of knowledge is described as the degree to which knowledge is difficult to articulate in words, put in writing or codify (Zander & Kogut, 1995; Reagans & McEvily, 2003; Swift & Virick, 2013;). This kind of knowledge due to its tacit nature requires greater effort to share. Usually it can only be transferred through personal observation, demonstration, or hands-on experience (Hamel, 1991; Reagans & McEvily, 2003; Swift & Virick, 2013). Due to the fact that it is difficult to obtain legal protection over something that cannot be seen or codified, IPRs cannot be applied to tacit knowledge. Thus, a lot of valuable knowledge may remain without appropriate formal protection. (Milesi et al. 2013). Hence, the biggest advantage of tacit knowledge that is difficult to transfer inherently protects the know-how of the business (Norman, 2002; Olander et al., 2014). In this case the risk of knowledge leak is significantly smaller, and therefore the need for formal protection is lower (Contractor and Ra, 2002; Olander et al., 2014)

Despite of the fact that tacit knowledge become a protective mechanism as such, it can be still shifted to the competitors through transfer of key employees or experts who possess the important skills about innovation (Boxall, 1998).

Human Resource Management

Seeing that tacit knowledge often resides in the company's employees, they play a major role in transfer of knowledge between businesses (Cohen & Levinthal, 1990; Minbaeva, 2005; Edvardsson, 2008 Olander et al., 2014;). Still, just a few scientists agree that Human Resource Management (HRM) is used as a mechanism for governing and protecting knowledge flows and protecting knowledge can be appropriate and beneficial for innovation protection (Hurmelinna-Laukkanen & Puumalainen, 2007). In turn, HRM can be considered as labor legislation. It

determines the rules for the employee-employer relationship and define part of the rights and responsibilities of each party. Nevertheless, HRM is still strongly informal in nature, because it covers practical issues such as minimizing personnel turnover, increasing employee commitment, offering further training and career advancement, etc. (Olander et al., 2014).

All in all, it is important to notice that the use of appropriation mechanisms does not guarantee success and profits from innovation. Rather appropriate mechanism should be adopted with intention to prevent imitation. If such prevention is not possible, a suitable mechanism must be chosen in order to protect the company's market position. For example, secrecy and patents are oriented towards either delaying or preventing imitation. Meanwhile, complementary assets or first-mover strategy only strive to protect the company's market position. (Milesi et al. 2013)

2.4 Strategies of appropriation

It was discussed earlier that appropriability of innovation is based on the potential to extract value from innovation (Teece, 1986; Malerba, 2002; Winter, 2006; Spithoven and Teirlinck, 2015). In turn, an appropriation is the realized potential from it. (Ritala & Hurmelinna-Laukkanen, 2018).

Consequently, appropriation strategies can be defined as innovation specific strategic choices over the mechanisms, whereas the openness of appropriability is focused on gaining profit from innovation under different external factors (Ritala & Hurmelinna-Laukkanen, 2018). These mechanisms can be understood as a potential to generate value from innovation, such as intellectual property rights, core innovation or complementary resources. In this case, the profit gaining from innovation depends on whether it is core innovation itself or its complementary assets. Furthermore, openness of innovation can be understood as company's alignment towards external players. It can vary between being fully closed, firm-specific or disseminative form where the innovation itself is shared to the external stakeholders. (Ritala & Hurmelinna-Laukkanen, 2018).

Thus, based on the discussion above there are two dimensions of appropriation strategy which could be used by the firm. The first one is resources which create the basis for the appropriation. It can be a core innovation which is owned and controlled by the company; and complementary resources which belong to the internal and external activities of the company. Second dimension of appropriation strategy is openness. It can be viewed as the extent to which the innovation itself and its complementary resources can be openly accessed (Ritala & Hurmelinna-Laukkanen, 2018). Companies, which operate in open innovation ecosystems allow the collaborations across the organizations due to expand of their own resources. It permits aggregation and integration of resources within this business network (Xie & Wang, 2020).

Consequently, this thesis would like to use the framework of six forms of appropriation strategies developed by Ritala and Hurmelinna-Laukkanen, (2018). This framework is presented in the Figure 1.

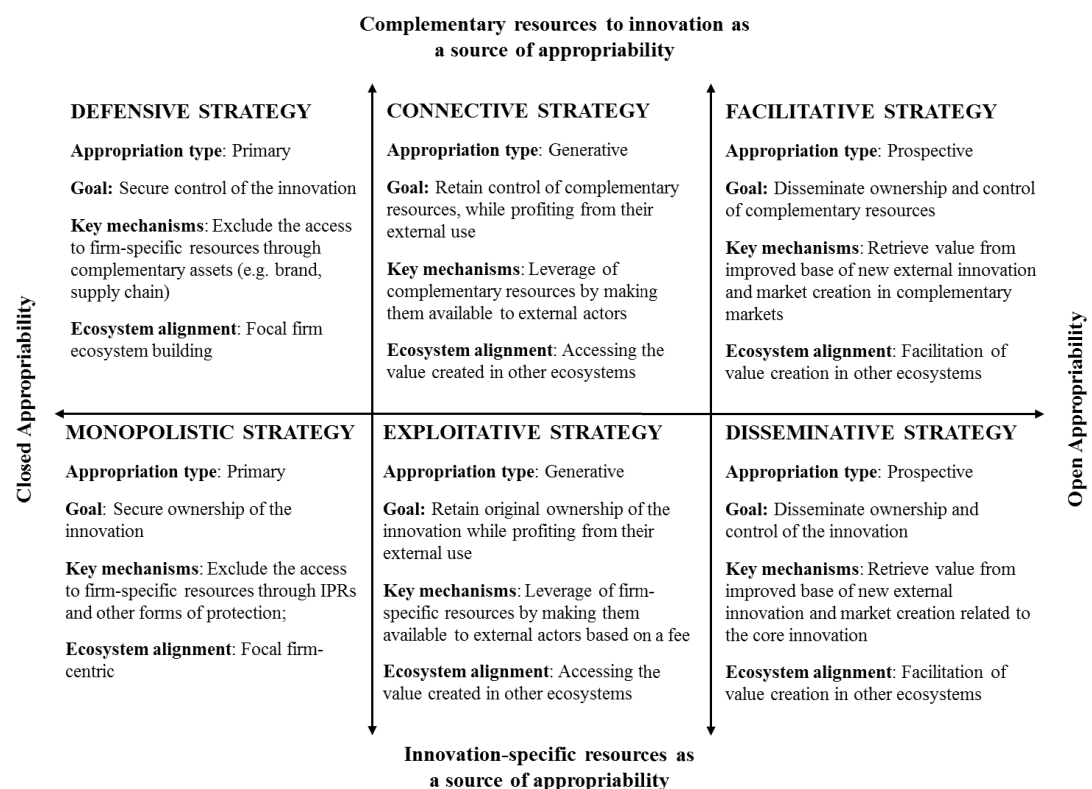


FIGURE 1. Conceptual framework of appropriation strategies (adapted from Ritala & Hurmelinna-Laukkanen, 2018)

This framework describes innovation from several perspectives. On the horizontal axis the innovation is viewed from closed to open appropriability extent; it goes along three shapes of appropriability, such as primary, generative and perspective. On horizontal axis it is shown the source of innovation which can vary from innovation-specific resources to complementary resources (Figure 1). This framework allows to understand who gains the benefit from capturing the value from the innovation, whereas distinguishing interrelated businesses and opportunities of open innovation. Thus, this framework consists of defensive, connective, facilitative, monopolistic, exploitative and disseminative strategies. Those strategies will be discussed below in more detail (Ritala & Hurmelinna-Laukkanen, 2018).

2.4.1 Monopolistic

The first strategy discussed in the framework is monopolistic. Monopolistic strategy tries to secure the ownership of this innovation. It is obtained by excluding innovation from other actors. The purpose of this strategy to minimize or eliminate the imitation of the core innovation and its related knowledge. This strategy allows to gain the higher financial returns and other outcomes which would belong to the innovative company. This strategy follows classic closed-innovation model where all inventions coming from the company are closely protected. (Chesbrough, 2003; Alexy et al. 2017). The main mechanisms used in this strategy are the ones related to the protection of intellectual property rights, secrecy, human resource management practices. These mechanisms are created in order to keep the knowledge in-house. Those protective mechanisms are means to restrict the access to the knowledge by the external actors. The purpose of this strategy to get immediate and direct financial outcomes from the innovations. This strategy belongs to the primary appropriability. (Ritala & Hurmelinna-Laukkanen, 2018).

2.4.2 Defensive

The goal of the defensive strategy is to secure the control over the core innovation. This type of strategy belongs to the closed-appropriability approach. It is similar to monopolistic strategy, but in this form of appropriability strategy complementary resources play a crucial role. This strategy facilitates to exclude competitors from

benefiting from innovation and company resources. The company is doing it by building a strong brand, using marketing capabilities. The firm is also trying to strengthen the ecosystem around the firm having reliable relationships with suppliers. Using this strategy, it is hard to protect the core innovation due to easy of replication. However, due to strong ecosystem around the innovation, it enables the protection. (Ritala & Hurmelinna-Laukkanen, 2018).

This type of strategy is often used when it is impossible to isolate the core innovation due to applicability or utility (López & Roberts, 2002). However, the complementary assets can be still used by the organization (Teece, 1986). Furthermore, there is an advantage of utilizing a defensive strategy. It makes a market entry more challenging for other rivals if the complementary assets are hard to imitate (Huang et al. 2013). This type of strategy also belongs to the primary appropriability. (Ritala & Hurmelinna-Laukkanen, 2018).

2.4.3 Exploitative

Similarly, to the mentioned above strategies, exploitative strategy also has a goal to benefit from the ownership of the innovation. Nevertheless, this type of strategy pursues more open approach. In this type of strategy, a core innovation is not kept within the company. The financial outcomes come to the innovative company when other players start to use the innovation. In this case, a core innovation is reinforced by interaction with ecosystem, but still is controlled and secured by isolating appropriability mechanisms, like licensing agreement (Vanhaverbeke & Cloudt, 2006; Pisano and Teece, 2007). It means that a company gets the financial outcomes from value created in the ecosystem from the usage of innovation (Ritala & Hurmelinna-Laukkanen, 2018).

This kind of appropriability mechanism belongs to generative type because the financial returns are received from the other sources. In this kind of strategy innovation's usage is less controlled by the company and depend on the future activities of the external players. (Ritala & Hurmelinna-Laukkanen, 2018).

2.4.4 Connective

The fourth type of strategy is called connective. Connective strategy has the aim to control the complementary resources of the innovation, whereas interacting with external players with the access to those resources. The company generates the profit when the actors use the resources. It means that the profit of the company comes from connectivity of the company's complementary resources to the different players of the ecosystem. This is how the organization utilize the connective appropriation strategy. This kind of appropriability belongs to the generative type, where the external players utilize the complementary resources and focal company receives the financial returns from its usage as the result (Ritala et al. 2014; Ritala & Hurmelinna-Laukkanen, 2018).

2.4.5 Disseminative

This type of strategy differs from the ones discussed above. It does not try secure or control the ownership of the innovation. In turn, the organization is reinforcing own resources by making them openly available to the external players of the ecosystem. This measure provokes active usages of those complementary resources and possibly further innovative new combinations (Ritala & Hurmelinna-Laukkanen, 2018).

Disseminative strategy facilitates the creation of new ecosystems around the company's core innovation. Utilizing this kind of strategy, a company needs to release the control of innovation having a desire to benefit from its developments created by other actors in the future. This is the way how the focal company can generate the profit from its innovations. This strategy belongs to the prospective appropriability because the coming returns comes from its future usage by external players of the ecosystem (Alnuaimi & George, 2016). Prospective appropriability undermines that profit will be received in the future from the improved outcomes of the innovation. For the disseminate strategy it means that financial returns will be obtained from the collaboration and interaction with external players despite of the fact that they might not directly compensate for its utilization (Ritala & Hurmelinna-Laukkanen, 2018).

2.4.6 Facilitative

The last strategy of appropriation, examined in the figure 1, is facilitative (Figure 1). This strategy is similar to disseminative one. However, this strategy aims on facilitation of innovation and market creation as the result of external players. It occurs through providing the open access of the complementary resources to the external players of the ecosystem. A general idea of this strategy is to facilitate value created in the external systems by offering an open access to the innovation with the desire to generate the financial outcomes from it in the future. It means that company can share openly the resources which are not solely complementary to the own innovations, but also for other players in the industry and even beyond it. (Ritala & Hurmelinna-Laukkanen, 2018)

All in all, when choosing an appropriation strategy, it shouldn't be considered as the final decision. Over time and changing market conditions, the firm might need to change the strategy. Even if the strategy remains the same, the mechanism may change. (Ritala & Hurmelinna – Laukkanen, 2018)

2.5 Dynamics of appropriability

Dynamics of appropriation strategy can vary depending on the appropriability mechanisms, which belong to the appropriability regime. This regime reflects the availability and strength of the protection instruments. In the other words, regime of intellectual property is one of the most used entities in respect to protection of innovation. It is ground point for appropriability mechanisms' analysis. In this study, dynamics of appropriation strategies will be examined based on Appropriability Regime framework provided by Hurmelinna-Laukkanen and Puumalainen depicted in the figure 2.

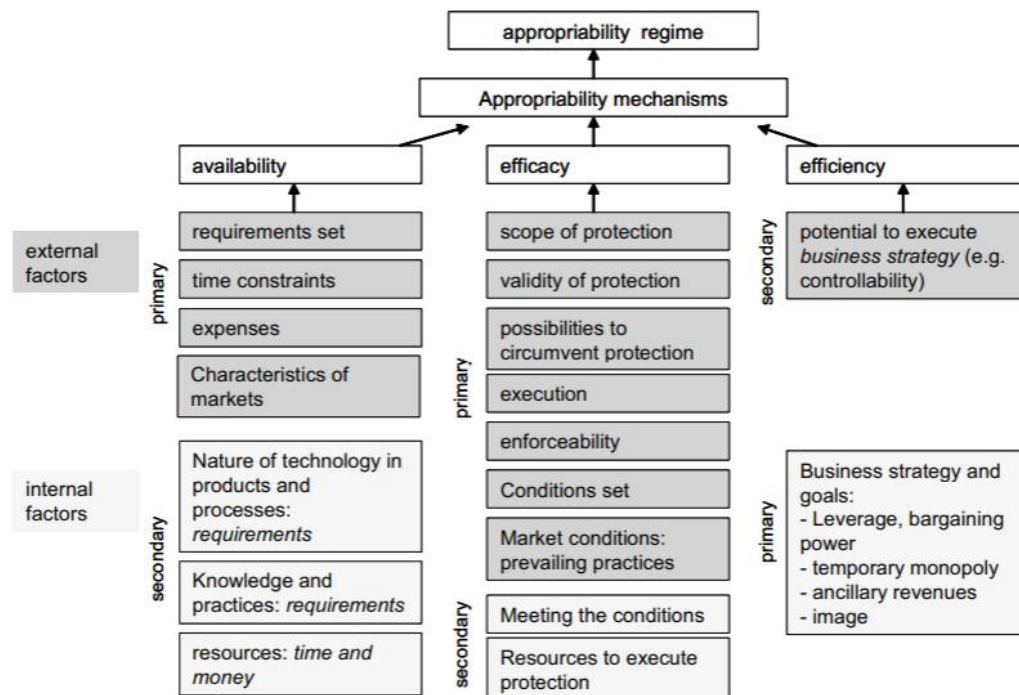


Figure 2. Internal and external factors behind availability, efficacy and efficiency of mechanisms (adapted from Hurmelinna-Laukkanen & Puumalainen, 2007:6).

According to the definition of appropriability regime there are few factors that have influence on the selection of appropriability mechanisms in the regime. Firstly, not all mechanisms a company can afford. Those mechanisms that company can afford not necessary may lead to expected results. For example, different parties can judge mechanisms differently, as a result it will not protect innovation effectively. Therefore, availability and efficacy are the most important conditions for a strong appropriability strategy which in turn will be effective in protecting innovation from imitation. (Hurmelinna-Laukkanen & Puumalainen, 2007).

Secondly, managers must know how and when to use the protective mechanisms so they would be able to gather most benefits from an innovation. Most important is to know that appropriability mechanisms do not guarantee competitive advantage, instead it can help to enhance position. Also, appropriability mechanisms can be used for different outcomes. For example, a patent can be landed or sold, so it can make profit; complimentary assets can be used to improve an image of a company, etc. Here desired results are essential foundation when designing a set up and selecting appropriability mechanisms. Precisely planned appropriation strategy can lead to best

results and benefit company from protecting, sharing or exploiting an innovation. Thus, availability, efficacy and efficiency are the most important factors when shaping the appropriability regime. (Hurmelinna-Laukkanen & Puumalainen, 2007).

Besides, there are many other issues that should be considered when developing the appropriation regime. The dynamics is one of them; efficacy and availability can change over time and vary across mechanisms. For example, firm's resources and capabilities may change over time; from the external factors, market conditions or legislation systems may vary. Thus, familiarities with means that secure the business position, is a necessity to be able to protect firm's resources. (Hurmelinna-Laukkanen and Puumalainen, 2007).

Based on studies, availability and efficacy are 'given' determinants of the appropriability regime. While resources of a company mean (as the effect) is a company able to pay fees of a patent. This in turn, is external factor, because fees are established by the officials. Likewise, the company's inventions not necessary can be applied for patents, because the conditions are set by legal authorities (see Figure 4). Although the company itself may be an initiator of changes in certain mechanisms, more often external factors are the ones that lead the changes. (Hurmelinna-Laukkanen and Puumalainen, 2007).

The second important step that should be considered well, is choices that are made by a company: mechanisms of appropriability in this case should be adapted according to strategic goals of a company. Here the goals and decisions are considered as second set of determinants – so called 'chosen' determinants, that in turn affects the regime. In some cases, at this point collaboration or networking would bring more benefits to the business, rather than protection of the innovation (Hurmelinna-Laukkanen et al. 2007). It is beneficial to notice that the formation of the appropriation regime is an adaptive process, likewise variables such as everchanging environment, time frame, and varying blocks affecting the business continuously. (Hurmelinna-Laukkanen and Puumalainen, 2007).

In sum, many factors play own role when choosing appropriability mechanisms to protect innovation. External factors such as field, industry, nature, sector of the

business surely have the effects when choosing appropriability of mechanisms. Additionally, internal factors such resources as money and capabilities are important, because they support firm's ability to meet requirements set when choosing appropriability mechanisms. For example, often small companies cannot afford patent protection because of high costs (Lerner, 1995; Vanhaverbeke & Cloudt, 2006). Several types of resources are needed to enable attaining, as well as maintaining effective protection. Underlying reasons to acquire protection also affects the appropriability regime formation (e.g. Pitkethly 2001; Ojanen & Vuola 2003). To protect innovation as the main asset from competitors patents is not the best solution. The reason is that patents disclose information. Meanwhile IPRs may be more helpful. In some cases, safe transferability is more valuable than keeping knowledge in a secret. Applying tacitness or HRM protection mechanisms may be hard to extract value from them. Thus, for short-term advantages tacitness and HRM are not the best choice. Tacitness may be beneficial when securing the company's intangibles in collaboration and internationalization, also to some extent for getting financing. Lead time, for example, can increase an attractiveness in the way as potential business partner. HRM plays huge role in terms of long-term value creation, because employees and their behavior create the picture of the company (see, e.g. Aaker 2004). IPRs may be seen as important indicator of capable and innovative firm. On the other side, patent prosecutions and litigations can damage firm's reputation. (Hurmelinna-Laukkanen & Puumalainen, 2007).

Owing to the fact that appropriation strategies and appropriability mechanisms can change over a time, it is important for companies to analyze and monitor what combination of them would be the most suitable for a company at a particular moment. Consequently, this thesis is aimed to examine which combination of appropriability and appropriation strategies was chosen by a company, how they changed dynamically over the time, and what influenced the change. This analysis will be based on Coca-Cola company example.

3. RESEARCH METHODOLOGY

In this chapter the research approach and research design are be described. Moreover, this chapter outlines the data collection method. Finally, data analysis method is shortly represented.

3.1 Introduction to the chosen approach

For this thesis a case study as a research strategy was chosen. A case study as a research strategy has the purpose to understand the phenomenon within a real-life context having several sources of evidence for its undertaking. (Yin, 2014) Furthermore, this research strategy is very useful for gaining deeper understanding of the research subject and its processes. Therefore, this research strategy is the most applicable for the chosen research approach because it allows to examine existing theory on the example of the case company. Therefore, a case study is the most suitable research strategy which can be used in this thesis because it can allow to understand the dynamical change of the innovation strategies which were appropriated by the case company. Single case study is chosen because for this particular study one company is selected, that is the Coca-Cola company.

Hence, a qualitative research as method is applicable for this strategy. Also, a qualitative research method was chosen because it allows to understand the in-depth a research phenomenon. Furthermore, a qualitative research allows to understand a studied subject in more intangible nature. It can be explained by the authors of the book “Qualitative Methods in Business Research”, who said : “Qualitative research is a somewhat suspicious affair, one that can be used as complimentary when studying something that is expressed in words and cannot be translated into numbers” (Eriksson & Kovalainen, 2008:5). This type of approach is very important for management and business studies because it permits to examine data which is narrative (Wilson, 2010). Furthermore, a qualitative research allows to answer the questions “what”, “how” or “why” rather than addressing “how many” which is mainly used in the quantitative research (Eriksson & Kovalainen, 2008). Therefore, a qualitative approach is the most suitable for this study because it allows to understand in-depth the dynamics of appropriation and appropriability strategies on

the example of Coca-Cola case company. It can permit to examine how those strategies change over the time and which factors can affect them in the respect of modification of Coca-Cola bottle, Merchandize 7x and the variety of beverages. Here, Merchandise 7x is the core innovation, and the Coca-Cola drink bottle and variety of drinks are complementary assets for the core innovation.

Furthermore, an explanatory research was chosen as a research approach for this study. Explanatory research is distinct from exploratory one which has the aim to search for a new insight of the phenomenon and understand what is occurring with the subject in the new light. Furthermore, exploratory studies are used to understand and search for new ideas which will be tested on the future research (Yin, 2014). In turn, explanatory studies differ from exploratory ones because they have a purpose to establish and explain the relationships between the variables. Explanatory studies are used when there is a need to examine the events and processes; and to explain how they relate and occur (Yin, 2014). Consequently, the theory regarding appropriability and appropriation strategies will be reviewed on the Coca-Cola case company in a respect of development and change over a time of its bottle, Merchandize 7x and a variety of its beverages. Thus, an explanatory research is the most suitable one for this thesis.

Furthermore, this thesis is using an abductive method as a research approach. The abductive approach is not inductive neither deductive one, but rather it is combination of inductive and deductive approaches. The approach constant moves from the empirical to theoretical dimensions of analysis and then back. See the blue and red lines in figure 3 below. It can be explained that the theory needs to be justified by empirical studies. Then empirical observations can bring new insides related to the same issues. This might bring further need to redirect the current theoretical framework etc. (Dubois & Gadde, 2002)

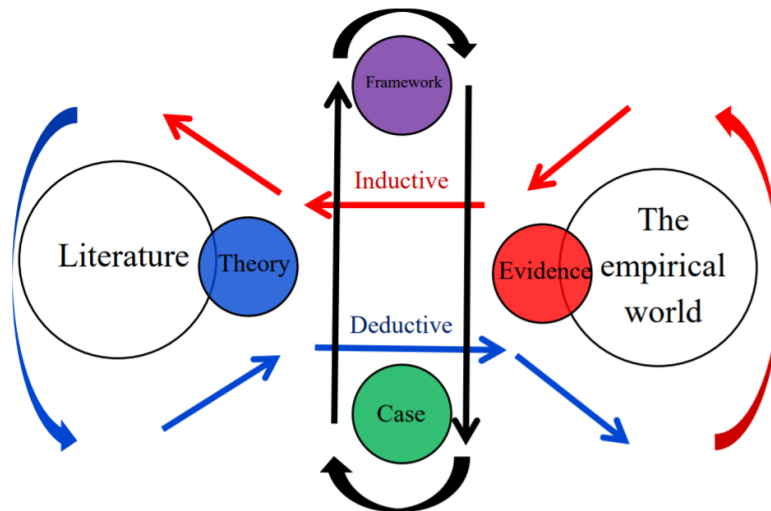


Figure 3. Combining two approaches (adapted from Dubois & Gadde, 2002: 555)

Dubois and Gadde (2002) stated that abductive approach is useful than just use of the pure inductive or deductive approach because it has own logic. ‘Instead, by constantly going ‘back and forth’ from one type of research activity to another and between empirical observations and theory, the study then is able to expand his understanding of both theory and empirical phenomena.’ (Dubois & Gadde, 2002:555). In fact, that theory cannot be understood without empirical observation and vice versa, thus abductive approach is most suitable for this particular study in order to evaluate the existing literature regarding the appropriation and appropriability strategies which change over a time on the case of Coca-Cola company. Therefore, this thesis is aimed to examine whether the theory discussed in the theoretical part will remain applicable to the context of development of appropriability and appropriation strategies used on the example of the case company.

3.2 Data collection method

Consequently, in this thesis, a longitudinal design for the single-case study was chosen. The longitudinal design is a study of a particular case or group of cases over a long period of time (Wilson, 2010). The purpose of this research is to study the changes related to appropriabilities and appropriation strategies and its conditions that take place over a period of time between the years of 1886 when the company

has been launched and 2020 as the company is still trading. The longitudinal design allows examining the same single case at two or more different points in time. Thus, longitudinal design is applied for this particular study.

Additionally, archival design was chosen as a data collection method for this thesis, because this design relates to public records and documents of the company. Archival data is a type of secondary data, sometimes referred to as raw data that exists in the form in which it was originally intended such as business reports, staff records and minutes for example. (Wilson, 2010)

3.3 Data analysis method

For this study qualitative data analysis is implemented by the following steps. Firstly, the raw data collected from different sources and then described chronologically. Secondly, the data is classified by using the theory. Then, data is interpreted adapting the framework. Finally, findings are stated in the conclusion part. The figure 4 below shows the structure of the empirical part for this study.

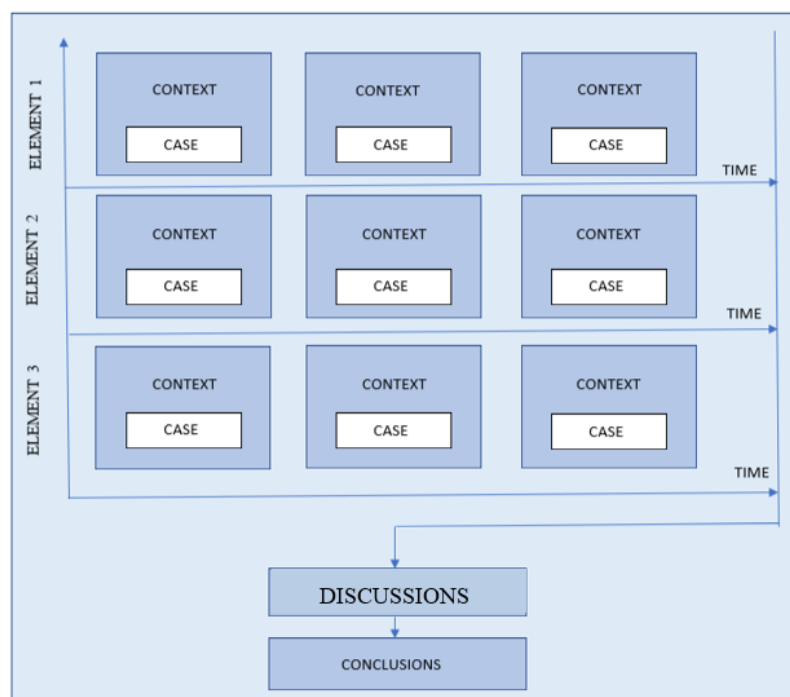


Figure 4. The structure of the empirical part

Figure 4 shows that three elements of the Coca-Cola product are studied over time. Changes related to each element are outlined chronologically as a separate case and described in more detail in the context. Finally, the findings are discussed in the conclusions and discussions part.

As it was mentioned before three elements of the Coca-Cola product are chosen in order to implement this research. Those elements are more precisely described below.

3.4 Three elements for the study

Coca-Cola company operates in nonalcoholic beverage industry and producing variety of products. For this particular study three elements of Coca-Cola company's product were chosen: the secret formula - merchandise 7x, a bottle of Coca-Cola beverage and a variety of Coca-Cola drink.

The secret formula – merchandise 7x is the core innovation of the company. Meanwhile, the bottle of Coca-Cola drink and a variety of drinks are complementary assets for the main innovation, where the bottle helps to protect core innovation from imitators and also helps to avoid consumers' confusion when choosing the drink. Variety of drink increase value of consumer because it allows to satisfy customers' own wishes.

3.4.1 Element one - Merchandise 7x

Secrecy is one of appropriability mechanisms for protecting innovation. "From a strategic perspective, secrecy can be a key resource and source of competitive advantage" (Hurmelinna-Laukkanen and Puumalainen, 2007; Hannah et al. 2014). According to researchers many companies prefer to make trade secrets rather than creating patents in order to protect innovation from imitations and to maximize the returns on innovations' investment (Leiponen and Byma, 2009; Hall and Sena, 2017). Coca-Cola company has successfully protected recipe of the Coca-Cola Classic drink for more than 100 years. The formula is called Merchandise 7X. The company continues to guard the secret as it's the most important innovation. (Coca-

Cola Journey, 2020). Thus, this study will analyze the protection of secrecy of Coca-Cola drink's recipe as appropriation mechanism in innovation management.

3.4.2 Element two - The bottle of Coca-Cola drink

Packaging is especially important for the products. It is usually viewed as important marketing instrument. Some companies tend to spend more money on packaging than on products' advertising itself. (Rebollar et al. 2012). Certainly, a proper packaging can be an efficient communicative instrument in the same manner as advertising (Khan et al. 2015). Indeed, a communicative aspect of packaging is particularly important for consumers when they make in-store purchase decision. It communicates the brand identity and personality; it brings the differentiation and adds the value for the product (Binninger, 2015; Gomez et al., 2015).

The bottle of Coca-Cola drink has changed several times since the product was created. There are concrete packaging attributes, such as: size, color, shape, logo, texture, typeface, pictures and label information. Those elements need to be analyzed together with abstract packaging features as prototypicality, novelty and attractiveness. (Söderlund et al. 2017) Those packaging elements will be analyzed in the empirical part, on the example of Coca-Cola bottle.

3.4.3 Element three - Coca-Cola drinks variety

Researchers tell that new products are often introduced not necessarily only by new companies but also by existing ones (Florin et al., 2012). Furthermore, it was investigated that consumers tend to have a variety among food and drinks preferences. (Drescher et al., 2008). Coca-Cola, as a company, was producing its classic drink since 1886. A Diet Coca-Cola beverage was introduced only after 100 years since its establishment. However, nowadays the company is serving a variety of Coca-Cola drinks for consumers having different tastes and lifestyles. Thus, this longitudinal research will analyze how external factors as changing customer preferences affected the appropriability and appropriation strategies of innovation of Coca-Cola drink's taste.

4. FINDINGS

4.1 Case Coca-Cola Company

The Coca-Cola Company has long history starting from 1886, when John Pemberton invented Coca-Cola syrup at his back yard and sold the first glass of drink at Jacob's pharmacy in downtown Atlanta. During the first year in the market Coca-Cola drink sales reached more or less nine drinks per day. Nowadays, sales are estimated at 1,9 billion daily servings of Coca-Cola beverages globally (World of Coca-Cola, 2020).

Year 1887 the founder has sold the company to new owner Asa G. Candler, who turned the Coca-Cola company into an international company. It was reached through aggressive advertising and marketing. During the early years of production, the drink was sold in glasses from a fountain. Just in late 19th century beverage started to be sold in bottles. In 1894, being impressed by the growing demand for Coca-Cola drinks, Joseph Biedenharn invented bottling machinery to make the beverage portable. It was a beginning of the Coca-Cola beverage bottled era. (The Coca-Cola Company, 2020)

Later, in 1919 company was sold to Ernest Woodruff for 2,300 \$. At 1923 new owner entrusted the company to his son Robert Woodruff, who introduced the Coca-Cola to the world Olympic Games in 1928 and that opened the doors for distribution of beverage to many countries outside the US. For many years company manufactured only one brand that was the Coca-Cola. (Coca-Cola Journey, 2020).

New era for company has started in the 1980's when Roberto Goizueta became the Chairman, Director and CEO of the Coca-Cola company. At the time, people were beginning to be conscious of healthy lifestyle and were keenly watching what to eat and what not to. Roberto understood that this is a time of much change and innovation at the Coca-Cola Company. Thus, in year 1982 he introduced for the world a diet coke. The beverage was welcomed by the consumers. (Coca-Cola Journey, 2020).

Nowadays, Coca-Cola is a leading beverage company in the world. According to Forbes, an American business magazine, it is one of the most innovative companies in the world (Forbes, 2018). The organisation manufactures, advertises and sells about 500 brands in over 200 countries. Due to the trust which it gained over the years, the company sells billions of the products daily. Despite of the fact that Coca-Cola is one of the world's most popular beverages, the company has managed to keep its complete recipe in a secret. Thus, it prevented competitors from copying the formula. The recipe for Coca-Cola syrup that is called "Merchandise 7x", remains a closely guarded trade secret. (Allen, 2015; Butler & Tischler, 2015).

4.2 Merchandise 7x

Coca-Cola is a carbonated non-alcoholic soft drink manufactured by the Coca-Cola company. The drink's name consists of its two original ingredients: coca leaves and kola nuts which is a source of caffeine (Allen, 2015). It was invented in year 1886 and it is still one of the famous soft drink in the world. (Allen, 2015; Butler & Tischler, 2015; The Coca-Cola Company, 2020)

The Coca-Cola company produces concentrates and then sells to licensed Coca-Cola bottlers in the whole world. The bottlers, regarding exclusive contracts with the company, produce the finished product combining concentrate with filtered water and sweeteners. Then, they sell bottled product to retail stores, restaurants and vending machines. The concentrate of Coca-Cola also is sold for soda fountains in restaurants and for foodservice distributors (The Coca-Cola Company, 2020).

Merchandise 7 that is a recipe formula for the syrup, still remains a closely guarded and best-kept trade secret in the world. However, the strategy for the core innovation of Coca-Cola soft drink formula was changed few times.

Initially, the seven-ingredient formula was invented by John Pemberton. At the end of 19th century, there was an excess of new beverages in the market. They were shared drinks at soda fountains in places where people like to hung out (Butler and Tischler, 2015). Pemberton understood that drink should have an original taste that would surprise potential customers and would be able to compete with tea and

coffee. After one-year experiments, in the end of 1886, the most successful soft drink of all times was born (Allen, 2015; Butler and Tischler, 2015). However, Pemberton was forced to stop doing the business because of health issues and in 1887 he sold the recipe to a businessman Asa Griggs Candler. While Pemberton was the owner of the recipe, he had shared the formula with at least four people, but it wasn't written down. New owner of Coca-Cola company immediately understood the importance of the secret. Candler had made the changes to the ingredient's list. It helped to improve the flavor of the drink. Since that time, he claimed that for now nobody knows the "real" formula of the soft drink (Allen, 2015). Therefore, in 1891 Asa Candler had the first attempt to protect the formula using a secrecy as a monopolistic strategy for Coca-Cola's core innovation. Nowadays, despite of the fact that there were several attempts of recipe's appear in the market which claimed that they are authentic; Coca-Cola stated that actual formula still remained secret and is only known to few selected anonymous employees of the company. (Allen, 2015; Butler & Tischler, 2015; The Coca-Cola Company, 2020)

Despite of the fact that the formula was known only by selected group of people, it has never been written down. However, in 1919 Coca-Cola was purchased by Ernest Woodruff and group of investors. Ernest Woodruff forced Candler's son to write down the formula. It was a collateral for a loan's arrangement. Then, this written formula was put in Guaranty Bank in New York. It was kept there until the loan was totally paid off. After that, in 1925 the secret formula was relocated to SunTrust Bank where it remained for 86 years. Recently, on 8th of December 2011, the secret formula was relocated in a vault in the ground of the World of Coca-Cola in Atlanta, where it remains nowadays. (The Coca-Cola Company, 2020)

Consequently, Coca-Cola decided to use a trade secret to protect its receipt's formula rather than using patent legislation. This measure gave a company a safeguard and an advantage over competition. Indeed, the scope of trade secrets are wider than of patents because any information which is not known by the public have more advantages for the business itself. The theory similarly discussed the fact that revealing the information to public by patenting the innovation have a threat of imitation and can provoke the raise of competition as the result. (Moniruzzaman, 2016)

Despite of the fact that patents have more statutory legal protect than trade secrets have, keeping a trade secrets demands less legal formalities. However, trade secret has their challenges too. The company must make a sufficient effort to keep the trade secret as a secret. Consequently, the most efficient way in making it, is to create a non-disclosure agreement with employees who possess the knowledge about the trade secret in question. Nevertheless, it is advisable for the companies to keep the trade secret as closely safeguarded as possible. (Moniruzzaman, 2016)

Coca-Cola is investing a lot of efforts to keep the recipe's formula as secret as possible. It is believed that only company's executives possess the knowledge about the beverage's secret formula. However, they do not know the whole formula, but only have the knowledge about its parts. It is also said that they are not allowed even to travel together in the same plane. The Coca-Cola company has never revealed the number of employees who has the knowledge about its secret formula. (Allen, 2015; Moniruzzaman, 2016)

On one hand, the advantage of having a trade secret over a patent is that patent have protection for only 17 years under the Patent Act of 1836 (35 U.S. Code) which was only extended to 20 years (The Uruguay Round Agreements Act, 1995). Furthermore, a patent demands a mandatory detailed description of the innovation. It means that Coca-Cola would have been forced to reveal its secret recipe and when the expiration date would have come, the other rival company would be able to use the secret formula, remake the same soft drink and sell it in the market. Owing to this fact, it has been various court cases between inventing and rival companies which occurred due to misuse of knowledge which was revealed through patent disclosures. On the other hand, a trade secret can be hold for eternity. Therefore, many big innovating companies, including Coca-Cola, for whom its core innovation (secret syrup's formula) represents its main product and a source of competitive advantage choose to protect it by trade secret. Coca-Cola preferred to rely on trade law of secret protection rather than on patents. Furthermore, a decision of keeping a its formula as a trade secret had helped Coca-Cola to protect its innovation and to predict a perpetual demand for its products. Nowadays, its formula is kept secret for more than

a century and known as the best-kept trade secret in the world. (Moniruzzaman, 2016)

However, while globalizing and entering new markets, Coca-Cola as a company had faced challenges in order to keep the formula as a secret. In 1977 the company decided to stop the production in India, because Indian government had asked to reveal its formula and collaborate with Indian production company under Indian Foreign Exchange Regulation Act (FERA). As the result, Coca-Cola returned to India after only 17 years of absence when the country had decided to change its governmental policy. (Moniruzzaman, 2016)

Furthermore, the other challenge had appeared in 2006 when one of the company employees had decided to sell the part of formula components to its biggest rival PepsiCo. Fortunately, PepsiCo had shortly informed Coca-Cola about this accident, telling that they have received the letter in official Coca-Cola envelop from individual named “Drik” telling that Coca-Cola is planning to launch a new product in the market. The anonymous person was ready to trade for it and for its formula. PepsiCo had also informed FBI about the case. Shortly, FBI had arranged the investigation about the attempt of product’s trade secret disclosure and had caught three suspects. They were Ibrahim Dimson, Edmund Duhaney, and Joya Williams. These people were arrested and charged for the incident of the attempt to reveal a trade secret. In fact, Joya Williams was seen in video while searching for confidential information regarding the new product; and was caught while putting a sample of the innovation in her bag. Later it was announced that it was the genuine product sample being under development. She got eight-years in prison. Ibrahim Dimson had got a five-year term, while Edmund Duhaney had received two-year in prison for conspiring a trade secret of Coca-Cola and desire to sell it to its rival PepsiCo. (Moniruzzaman, 2016)

After this accident, the CEO of the Coca-Cola company had told to the employees that keeping a trade secret is the lifeblood of the company. It means that when employees are enjoying drinking the Coca-Cola beverage, which is the world-famous drink, its formula and its secrecy are the main source of successful company’s

operation. It has been guarded as the secret for over the century. (Moniruzzaman, 2016)

Therefore, this Coca-Cola case shows that keeping a trade secret as protection mechanism of company's core innovation has its challenges to keep it as secret. However, trade secret can become an efficient mechanism for protecting the innovation from imitation because the company had succeeded to keep its core innovation as a secret for over the century. Then, Coca-Cola case in a respect to its Merchandize 7x had shown the importance of proper development of Human Resource Management practices like regulated non-disclosure agreements. Similarly, the role of government is crucially important as well. There is a need for strict laws regarding conspiracy and commercial information theft, from legal and criminal sides. These all practices can decrease the risk of knowledge leakage of company's core innovation and prevent it from imitation as a result.

4.3 The Coca-Cola bottle

At the beginning era of Coca-Cola, drink was sold in glasses from fountain. By growing demand of Coca-Cola drink that was an average of nine drinks per day sold in 1886 in Atlanta to being sold in every state of the US by 1900 encouraged the owners of the company invent a package. The main idea was to make the drink portable and also increase consumption of the drink (the Coca-Cola Company). At year 1894 bottling era has started that also allowed the company to sell bottling rights to businessmen under franchising agreements (Coca-Cola Company, 2020). Making Coca-Cola portable has increased sales and also popularity that led to thousand competitors' interest in trying to imitate the famous Coca-Cola product with intention to confuse the customers and benefit from it (Coca-Cola Company, 2020).

The bottles used in those days were like most bottles for soda and beer, simple straight-sided, in brown or clear color, with paper labels that were easy to duplicate. Even though, bottlers were forced to emboss the Coca-Cola logo onto every bottle, competitors, like Toca-Cola, Koka-Nola, Ma Coca-Co and many others, were able to imitate the Spencerian script logo. This kind of imitation confused the consumers;

thus, Coca-Cola company has lost big part of the market. While the company was dealing with these infringements, the litigation processes took years, and the company constantly needed more protection. (Coca-Cola Company, 2020).

As the first step to protect the Coca-Cola product from the infringers company introduced a diamond shaped label with colorful trademark. Unfortunately, the labels weren't stable because Coca-Cola bottles were often sold out of barrels of ice-cold water what made the labels to peel off. Moreover, some competitors imitated the label as well! Therefore, Coca-Cola company began a cooperative protection project between the company and its bottlers. Fortunately, the bottlers were also eager to distinguish their product from the imitators. (Butler and Tischler, 2015; Coca-Cola Company, 2020).

“Seeing competitors encroaching on his market, Thomas, the Chattanooga lawyer who had bought bottling rights for one dollar, told an associate, “We need a bottle which a person can recognize as a Coca-Cola bottle when he feels it in the dark...so shaped that, even if broken, a person could tell at a glance what it was” (Butler and Tischler, 2015:53). The story of that iconic shape is actually a tale of defensive marketing, an attempt to distinguish a fledgling brand which encouraged competitors to imitate the product (Butler and Tischler, 2015; Coca-Cola Company, 2020).

Finally, on 16th, 1915 final design of the bottle was patented under Samuelsson's name (the lead designer of the classic Coke-Cola bottle). To protect the secrecy of the design and the ultimate client, the submission of the patent was made without the signature embossed Coca-Cola script lettering. (Allen, 2015; Coca-Cola Company, 2020).

The innovated bottle had gone into production in early 1916, but not all bottlers were interested to switch to the new design. For many bottlers, the newly designed bottle was the most expensive portion of the business. Thus, the company has been challenged to convince bottlers to make the change. In 1918 the company began to do that with national calendar featuring the bottle. As a result, by 1920 most of the bottlers were using the innovated bottle. (Coca-Cola Company, 2020).

The patent for the bottle was renewed in 1923, and again in 1937, because patents expired after 14 years that time in USA. By 1951 all patents on the shape of Coca-Cola bottle had expired. At that time “distinctively shaped contour” as the bottle shape was so well known that company decided to grant a trademark status. Based on the results of the study made on 1949 which showed that less than one per cent of Americans could not identify the bottle of Coke by shape alone, The Coca-Cola bottle was recognized as a trademark on April 12th, 1961. (Coca-Cola Company, 2020).

To make the product lighter in the weight the company introduced its first 20-ounce PET contour bottle in 1993. The Coca-Cola bottle shape was supposed to distinguish it from other plastic bottles, like the first contour glass bottle back in 1915. By 2005, the Coca-Cola company has launched aluminum, as a new packaging material contour bottle as well. (Allen, 2015; Coca-Cola Company, 2020).

4.4 The Coca-Cola drink variety

Almost for 100 years the company produced only one product that was the Coca-Cola drink. But in the summer of 1980 Jack Carew, planning manager, was invited to work on a project that has been under consideration for two decades but was never fully implemented. The plan was to introduce a “diet” version of Coca-Cola. Until that time, extending the companies’ portfolio with a new brand was not an option. But there were significant changes going on in consumerism those days. People from baby boomer generation became more selective in food they eat. They started following healthy lifestyle and therefore number of calories was playing a significant role in every person’s daily calorie intake. Management of the company understood that this was a perfect time for a big change. “We needed a big idea to come out of one of the toughest decades we’d ever seen,” Carew explained (Coca-Cola Journey, 2020). The Diet Coca-Cola project was introduced but it was strictly kept as a top secret and only top senior executives knew about it. Meanwhile team members were asked to sign silent agreements before they got all the following details. (Allen, 2015; Coca-Cola Journey, 2020).

Diet Coca-Cola was quite a difficult decision, because the project was a risky one: if Diet Coke would fail, the future of the company would then be unknown; if leadership would say no to Diet Coke, the Coca-Cola could lose its position in the market. Finally, after long debates, in August 25, 1982 Diet Cola was launched. Colas took 60 percent of all sales for soft drinks in the USA market then, but the diet drink was growing three times faster than all other drinks. The new drink quickly became a huge success. Diet Coke as it turned out was the right product at the right time. By the end of year 1983 the drink was number one diet drink in the USA. Women rated it as the best soft drink. Till the year 2010 Diet Cola took third place in the best soft drinks in USA. The magazine “Advertising Age” named Diet Coke Brand of the Decade of ‘80s. As a result, Diet Coke increased Coca-Cola brand value. The Diet Coke was protected under the Coca-Cola trademark. (Allen, 2015; Coca-Cola Journey, 2020).

Coca-Cola company’s aspiration was always ongoing, and it was one of the top-selling soft drinks in the world. Inspired by the Diet Coke success many other drinks with a different taste in low calories were introduced, such as: Diet Cherry Coke, Diet Coke with lemon/lime, Diet Vanilla Coke, Coca- Cola Light Sango, etc. In 2001, Coca-Cola evolved its business strategy to become a total beverage company by providing much wider variety of options in line with changing attitudes and tastes. This shift in strategy has changed everything, from its portfolio to how the system operates. The new strategy was built on a concept “Think globally and act locally”. The intention was to make each business unit run its business independently by selling the company's global brands as well as leveraging on the company’s international scale to create or to acquire regional and local brands as well. (Allen, 2015; Butler and Tischler, 2015; Coca-Cola Journey, 2020).

Building a portfolio of “consumer-centric brands” challenged the management of the company to focus on two matters: what the company wants to sell; and what consumers want to buy. Keeping in mind that today consumers are willing to buy products that are more natural, at times with less sugar and calories, as well as with more benefits such as vitamins or nutrients. Putting consumer first, the other challenge was to expand the availability of smaller, more convenient packages with clear, easy to find calorie information and help people control their sugar intake. The

goal became to provide the next generation with low and no-sugar drinks they want without giving up the great taste they know and love. (Allen, 2015; Butler and Tischler, 2015; Coca-Cola Journey, 2020).

To understand consumer better, the company had introduced to the market the Coca-Cola freestyle machine and additionally Coca-Cola app to access and pour different mixes of the drink. The Coca-Cola Freestyle was the automatic drinks dispenser developed with an intention to provide the freedom to explore, pour, and enjoy consumers' perfect drinks. Connecting Freestyle to the Web allowed the company to understand its customers' wishes and needs fast and allowed to increase their go to market speed with new products.

Moreover, inspired by the mix-your-own-drink phenomenon and huge/great enthusiasm of fans the company also launched a Facebook page designed to Freestyle, where consumers were able to share any drink recipe they created. A Freestyle app let fans save their created recipes, scan them from the app to a machine, and then get their own created drinks. The outcome of this project was overwhelming, as thousands of exotic recipes poured in Facebook page. Moreover, people were able to post their special drink recipe along with creator's picture. (Allen, 2015; Butler and Tischler, 2015; Coca-Cola Journey, 2020).

This innovation as an extraordinary window let Coca-Cola company capture different consumption data, from usage patterns in different geographies to crazy tastes which fans were creating and sharing through social media. This information was beneficial to the company as it allowed them to extract trends earlier, infused good ideas for new product creation, and enhanced them speed to market. (Allen, 2015; Butler and Tischler, 2015; Coca-Cola Journey, 2020)

5. CONCLUSIONS

5.1 Merchandise 7x

Merchandise 7x is the secret formula of Coca-Cola drink. According the findings the formula of the recipe for the Coca-Cola syrup still remains a closely guarded and best-kept secret in the world. The appropriation strategy and appropriability mechanisms for this secret has changed few times over the time. See figure 5 below.



The figure 5. The appropriability mechanisms and appropriation strategies for the merchandise 7X. (Adapted from Ritala & Hurmelinna-Laukkanen, 2018)

Firstly, Asa Candler had first attempt to protect the formula using a secrecy as a monopolistic strategy for Coca-Cola's core innovation. Monopolistic strategy tries to secure the ownership of the innovation. It is obtained in order to exclude other actors from innovation. The purpose of this strategy is to minimize or eliminate possibility to imitate the core innovation or knowledge related to the innovation. This strategy allows to gain the higher financial returns and other outcomes that belong to the innovative company. Later the secret formula has been protected under the trade secret mechanism. It was written down, but was known only by selected group of people. Here defensive strategy was applied to the core innovation. The goal of the defensive strategy is to secure the control over the core innovation. This strategy

facilitates to exclude competitors from benefiting from innovation and company resources. This type of strategy is often used when it is impossible to isolate the core innovation due to applicability or utility.

Also, to protect the knowledge leak non-disclosure contracts were written with employees of the Coca-Cola company. If the firm is able to write good contracts that clear the ground and make the responsibilities of each party explicit, and then to monitor for breaches, then contracting is likely. Thus, considering the possibilities of the firm and the benefits that formal protection can offer it is advisable for the companies to conclude contracts with employees who has availability to the knowledge related to the innovation. Here is also good to remember that contracts do not protect the innovation but rather helps to protect from the breaches when dealing with innovation.

More, the company is producing the syrup and then sells to the bottlers and distributors by being the sole-source provider. Could the secrecy and inimitability of this product have been sustained for a century if bottlers also produced the syrup under contract to Coca-Cola? More likely, no. Based on those findings and theory described in the research work it is advisable for the companies to know that in order to gather most benefits from the innovation, secrets are more appropriate mechanisms to protect innovation when comparing with patents for example. Patents requires detailed description of innovation to be able to register innovation. That makes all information available to the third parties, that in turn allows to copy and use for own benefits.

Here, according to the theory primary appropriability is applied for the core innovation of Coca-Cola product with the aim to capture the share of the financial returns. Thus, it is advisable to business to apply primary appropriability to be able to protect innovation and gain most benefits from it.

5.2 The bottle of Coca-Cola drink

As the first step to protect the Coca-Cola product from the infringers company introduced a diamond shaped label with colorful trademark. Unfortunately, the labels

weren't stable because Coca-Cola bottles were often sold out of barrels of ice-cold water what made the labels to peel off. Moreover, some competitors imitated the label as well! To protect core innovation from imitation the shaped bottle was introduced to the market in case to protect own product from other companies' products. The story of that iconic shape is actually a tale of defensive marketing, an attempt to distinguish a brand which encouraged competitors to imitate the product. of the bottle was patented. The patent for the bottle was renewed several times and later on The Coca-Cola bottle was recognized as a trademark. To make the product lighter in the weight the company introduced its first 20-ounce PET contour bottle in 1993. The Coca-Cola bottle shape was supposed to distinguish it from other plastic bottles, like the first contour glass bottle back in 1915. By 2005, the Coca-Cola company has launched aluminum, as a new packaging material contour bottle as well. See figure 6 below.

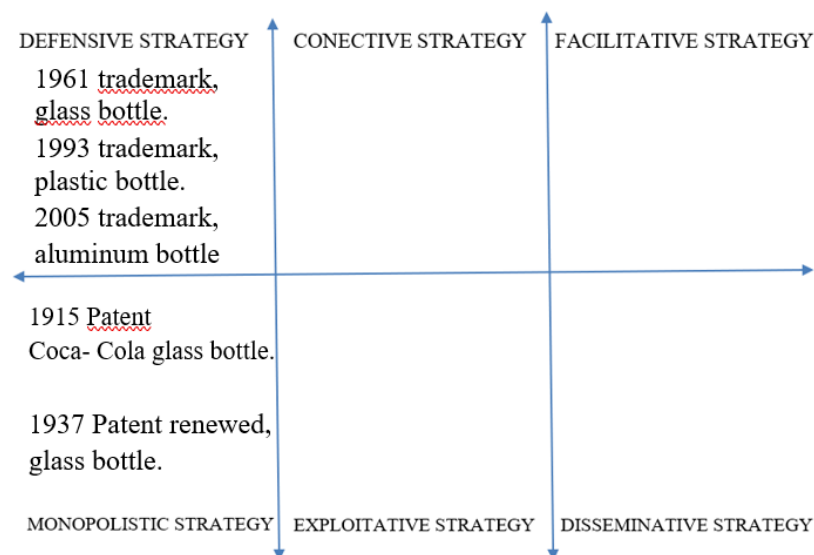


Figure 6. The appropriability mechanisms and appropriation strategies for the bottle of Coca-Cola drink. (Adapted from Ritala & Hurmelinna-Laukkanen, 2018)

The goal of the defensive strategy is to secure the control over the core innovation. This type of strategy belongs to the closed-appropriability approach. It is similar to monopolistic strategy, but in this form of appropriability strategy complementary resources play a crucial role. This strategy facilitates to exclude competitors from benefiting from innovation and company resources. The company is doing it by building a strong brand, using marketing capabilities. The firm is also trying to

strengthen the ecosystem around the firm having reliable relationships with suppliers. Using this strategy, it is hard to protect the core innovation due to easy of replication. However, due to strong ecosystem around the innovation, it enables the protection.

This type of strategy is often used when it is impossible to isolate the core innovation due to applicability or utility (López and Roberts, 2002). However, the complementary assets can be still used by the organization (Teece, 1986). Furthermore, there is an advantage of utilizing a defensive strategy. It makes a market entry more challenging for other rivals if the complementary assets are hard to imitate (Huang et al., 2013). This type of strategy also belongs to the primary appropriability.

5.3 The variety of Coca-Cola drinks

Only after 100 years, the company introduced the new brand that was Diet Coca-Cola. Until that time extending the company's portfolio with a new brand was not an option. The external factors have affected the company's decision to introduce the new drink. At that time significant changes were going on in consumerism. People from the baby boomer generation became more selective in the food they eat. They started following a healthy lifestyle and therefore the number of calories was counted from each portion of food or drink. Management of the company understood that it is time to make changes. The company introduced the diet drink which became a huge success. Inspired by Diet Coke's success many other drinks with different tastes in low calories were introduced. Later when the company evolved the new strategy to become a total beverage many other drinks were introduced to the market.

Then, to understand the consumer better, the company invented the freestyle machine and Coca-Cola app to the freedom to explore, pour, and enjoy consumers' perfect drinks. That allowed the company to understand its customers' wishes and needs fast and also increased the company's go-to-market speed with new products.



Figure 7. The appropriability mechanisms and appropriation strategies for the variety of Coca-Cola drinks. (Adapted from Ritala & Hurmelinna-Laukkanen, 2018)

Here exploitative strategy was applied, that has a goal to benefit from the innovation, see figure 7 above. Nevertheless, this type of strategy pursues a more open approach, the financial outcomes come to the innovative company when other players start to use the innovation. Even though a core innovation is reinforced by interaction with the ecosystem, still it is controlled and secured by isolating appropriability mechanisms, like licensing agreements. In this kind of strategy innovation's usage is less controlled by the company and depends on the future activities of the external players. This kind of protection is related to the generative appropriability and can be defined as efficiency in exploiting the innovation and gaining the share of its future progress. This approach demands a more long-term perspective. It is closely related to the "open appropriability" regime.

5.4 Theoretical implications

This research makes a strong contribution to the studies related to innovation appropriability from several aspects. First, an empirical study shows how innovation can be protected from imitation by using various appropriation strategies and appropriability mechanisms. Findings show that different appropriability

mechanisms and appropriation strategies can be adapted for the same innovation and they may change during the time according to the internal or external changes of the business.

Second, this study advances knowledge on value extraction from the innovation. Studying three elements of the Coca-Cola product showed that in the case to protect and extract the value from the main innovation complementary assets of the product are also protected by adapting various appropriability strategies and appropriability mechanisms and also can be changed during time according to changed conditions. Finally, the study shows that only a good understanding of appropriability strategies and appropriability mechanisms can save innovation from imitation and profit the innovator itself.

5.5 Managerial Implications

In order to benefit from the innovation mostly, the company's management should be familiar with all possible protection mechanisms and appropriation strategies in all. Then, managers of the innovative company have to be able to evaluate the resources of the company, which creates the basis for the appropriation. It can be a core innovation that is owned and controlled by the company or complementary resources which belong to the internal and external activities of the company.

According to the definition of appropriability regime there are few factors that have an influence on the selection of appropriability mechanisms in the regime. Firstly, not all mechanisms a company can afford. Those mechanisms that company can afford not necessary may lead to expected results. For example, different parties can judge mechanisms differently, as a result it will not protect innovation effectively. Therefore, availability and efficacy are the most important conditions for a strong appropriability strategy which in turn will be effective in protecting innovation from imitation.

Secondly, managers must know how and when to use the protective mechanisms so they would be able to gather most benefits from innovation. Most important is to

know that appropriability mechanisms do not guarantee competitive advantage, instead, it can help to enhance position. Also, appropriability mechanisms can be used for different outcomes. For example, a patent can be landed or sold, so it can make a profit; complimentary assets can be used to improve the image of a company, etc. Here desired results are an essential foundation when designing a setup and selecting appropriability mechanisms. Precisely planned appropriation strategy can lead to the best results and benefit the company from protecting, sharing, or exploiting an innovation. Then when choosing an appropriation strategy, it should not be considered as the final decision. Over time and changing market conditions, the company might need to change the strategy. Even if the strategy remains the same, the mechanism may change.

Then it is important that should be considered well, are choices that are made by a company: mechanisms of appropriability, in this case, should be adapted according to the strategic goals of a company. In some cases, at this point collaboration or networking would bring more benefits to the business, rather than the protection of the innovation. It is beneficial to notice that adapting the appropriation strategy is a process, likewise variables such as everchanging environment, time frame, and varying blocks affecting the business continuously.

Owing to the fact that appropriation strategies and appropriability mechanisms can change over time, it is important for companies to analyze and monitor what combination of them would be the most suitable for a company at a particular moment. External factors such as field, industry, nature, sector of the business surely have the effects when choosing the appropriability of mechanisms. Additionally, internal factors such resources as money and capabilities are important, because they support a firm's ability to meet requirements set when choosing appropriability mechanisms. For example, often small companies cannot afford patent protection because of high costs. Several types of resources are needed to enable attaining, as well as maintaining effective protection. Underlying reasons to acquire protection also affects the appropriability regime formation. To protect innovation as the main asset from competitors patents is not the best solution. The reason is that patents disclose information. Meanwhile IPRs may be more helpful. In some cases, safe transferability is more valuable than keeping knowledge in a secret. Applying

tacitness or HRM protection mechanisms may be hard to extract value from them. Thus, for short-term advantages tacitness and HRM are not the best choice. Tacitness may be beneficial when securing the company's intangibles in collaboration and internationalization, also to some extent for getting financing. Lead time, for example, can increase attractiveness in the way as a potential business partner. HRM plays a huge role in terms of long-term value creation, because employees and their behavior create the picture of the company. IPRs may be seen as important indicator of capable and innovative firm. On the other side, patent prosecutions and litigations can damage firm's reputation.

5.6 Limitations and recommendations for future study

Few limitations of this study are worth to notice. Firstly, the research was based on one industry, which was the beverage industry. It may be that findings related to appropriability and appropriation strategies studies may differ when studying various industries. Thus, it is advisable to study other industries to find the new insides of this particular phenomenon.

Then, three elements of the Coca-Cola product were studied. Newly findings related to appropriability and appropriation strategies subject may be discovered if other components of the Coca-Cola company business would be studied, such as customer service, sales, or administrative for example. In case to understand the beverage industry better, the Coca-Cola company would be a good example, because the company is trading for more than 130 years and still is one of the most innovative business worldwide (Forbes, 2018). Thus, other components of the business may be studied in case to deeper knowledge of appropriability and appropriation strategies herewith.

Finally, this case study was based on all world market as a whole. Findings may differ if studies would be implemented on a single country market separately. Here, in case to deepen knowledge of international business, separate single market can be studied to understand better peculiarities of the economy of single market with the intention to be able to protect the innovation properly.

5.7 Validity and reliability

For each research it is crucial to understand how valid and reliable its results are. However, both terms of validity and reliability are the constructs of qualitative research. Reliability means to what extent the collected data or analysis's results of particular research will be repeated by the following researches using the same data collecting technique. The aim of the reliability is to minimize the biases and errors of the study (Yin, 2014). To deal with the problems of establishing the reliability of a case study multiple sources of evidence were used to implement this study. Then, archival design as a data collecting method has been used. Therefore, this study can state to be reliable because its findings are based on secondary data which is available publicly. Thus, its results can be repeated by following researches.

Furthermore, a validity is reflected to a degree that the results of the analysis would appear as they should be. Validity can be seen from the three angles, such as construct validity, internal and external. A term of construct validity means how accurate this study was in terms of operational measures (Wilson, 2010). According to validity requirements, questions, and objectives of this study are clearly defined. Measures related to each studied element of the Coca-Cola product are clearly defined. Finally, the findings of this study are compared with findings from the previous researches.

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